

**AMENDMENTS TO THE SPECIFICATION:**

**On page 1 after the title, please insert the following:**

**CROSS - REFERENCE TO RELATED APPLICATIONS**

The present Application is based on International Application No. PCT/EP2004/052736, filed on October 29, 2004, which in turn corresponds to France Application No. 0313128 filed on November 7, 2003 and France Application No. 0405254, filed on May 14, 2004, and priority is hereby claimed under 35 USC §119 based on these applications. Each of these applications are hereby incorporated by reference in their entirety into the present application.

**On page 1, after the cross reference to related applications, please insert the following header:**

FIELD OF THE INVENTION--

**On page 1 after line 9, please insert the following header:**

--BACKGROUND OF THE INVENTION --

**On page 3 after line 18, please insert the following header:**

--SUMMARY OF THE INVENTION --

**On page 4 after line 24, please enter the following header:**

--BRIEF DESCRIPTION OF THE DRAWINGS--

**On page 5 after line 2, please insert the following header:**

--DETAILED DESCRIPTION OF THE DRAWINGS --

**On page 5, fifth paragraph, lines 19-24 with the following amended paragraph:**

In the presence of  $M$  transmitters, at the instant  $t$  at output from the  $N$  sensors of the network, the method has the vector  $\mathbf{x}(t)$  representing the mixture of signals from the  $M$  transmitters. Around the instant  $t_k$ , the vector  $\mathbf{x}(t+t_k)$  sized  $N \times 1$ , representing the mixture of the signals from the  $M$  transmitters, is expressed as follows :

$$\mathbf{x}(t+t_k) = \sum_{m=1}^M \mathbf{a}(\theta_{km}, \Delta_{km}) s_m(t+t_k) + \mathbf{b}(t+t_k) = \mathbf{A}_k \mathbf{s}(t+t_k) + \mathbf{b}(t+t_k) \quad \text{pour-for- } |t| < \Delta t/2 \quad (1)$$

**On page 6, second full paragraph, lines 18-26 with the following amended paragraph:**

In the presence of  $M$  transmitters and after separation of sources, the method, at the instant  $t_k$ , possesses the  $M$  signatures  $\mathbf{a}_{km}$  for  $(1 \leq m \leq M)$ . At the instant  $t_{k+1}$  the source separation gives the  $M$  vectors  $\mathbf{b}_i$  for  $(1 \leq i \leq M)$ . The goal of this tracking is to determine, for the  $m^{\text{th}}$  transmitter, the index  $i(m)$  which minimizes the difference between  $\mathbf{a}_{km}$  and  $\mathbf{b}_{i(m)}$ . In this case, it will be deduced therefrom that  $\mathbf{a}_{k+1, m} = \mathbf{b}_{i(m)}$ . To make this association, the distance measure of closeness between two vectors  $\mathbf{u}$  and  $\mathbf{v}$  is defined, for example, by :

$$d(\mathbf{u}, \mathbf{v}) = 1 - \frac{|\mathbf{u}^H \mathbf{v}|^2}{(\mathbf{u}^H \mathbf{u})(\mathbf{v}^H \mathbf{v})} \quad (3)$$

where  $\mathbf{u}^H$  is the conjugate transpose of the vector  $\mathbf{u}$  and where  $\mathbf{b}_{i(m)} = \mathbf{b}_1 + \dots + \mathbf{b}_m + \dots + \mathbf{b}_{M1}$  where  $\mathbf{b}_m = \mathbf{a}_m$ , where each  $\mathbf{a}_m$  is associated with an  $s_m$ .

Thus, the index  $i(m)$  verifies :